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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
09/216,594	12/18/98	WHITEKER G	98U020

EXAMINER	
DI VERDI M	
ART UNIT	**PAPER NUMBER**
1755	9

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DATE MAILED: 03/12/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.	Applicant(s)
09/216,594	Gregory T. Whiteker et al.
Examiner	**Group Art Unit**
Michael J. DiVerdi	1755

☒ Responsive to communication(s) filed on *Dec 22, 2000*

☐ This action is **FINAL.**

☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire *3* month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claim

☒ Claim(s) *1-49 and 55-76* is/are pending in the applicat

Of the above, claim(s) *55-76* is/are withdrawn from consideration

☐ Claim(s) _____ is/are allowed.

☒ Claim(s) *1-49* is/are rejected.

☐ Claim(s) _____ is/are objected to.

☐ Claims _____ are subject to restriction or election requirement.

Application Papers

☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☐ All ☐ Some* ☒ None of the CERTIFIED copies of the priority documents have been

☐ received.

☐ received in Application No. (Series Code/Serial Number) _____.

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

☐ Notice of References Cited, PTO-892

☒ Information Disclosure Statement(s), PTO-1449, Paper No(s). *7*

☐ Interview Summary, PTO-413

☐ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

--- SEE OFFICE ACTION ON THE FOLLOWING PAGES ---

Response to Amendment

1. Applicants' cancellation of claims 50-54 as directed in Paper No. 8, dated December 22, 2000, is acknowledged. Claims 1-49 are currently being considered.

Election/Restriction

2. Applicants' election with traverse of Group I, claims 1-54 in Paper No. 8 is acknowledged. The traversal is on the ground(s) that the examiner has not submitted evidence that the inventions are distinct. This is not found persuasive because MPEP 806.05(h) Product and Process of Using states that "The burden is on the examiner to provide an example, but the example need not be documented" and goes on to state that "If the applicant either proves or provides a convincing argument that the alternative use suggested by the examiner cannot be accomplished, the burden is on the examiner to support a viable alternative use or withdraw the requirement." In the instant case, suggesting that the alternative use for the product as claimed is hydrogenation reactions is reasonable since polymerization involves an insertion reaction on the transition metal of an olefin into a metal-carbon bond and a hydrogenation reaction involves an insertion of an olefin into a metal-hydrogen bond which is more thermodynamically favorable. Additionally, the applicants in Paper No. 8 did not "prove or provide a convincing argument" against the suggested use, but only requested proof from the examiner.

The requirement is still deemed proper and is therefore made FINAL.

Claim Objections

3. Claims 1 is objected to because of the following informalities: the amended limitation in part e) of claim 1 is confusing. The part that reads "if the more than one heteroatom substituted phenoxide is oxygen" does not make sense since it is saying that a molecule is an oxygen atom. The part that reads "then the other heteroatom is not oxygen" raises the question what other heteroatom is this referring to? The confusion arises over the statement "more than one heteroatom substituted phenoxide." Does this mean more than one heteroatom on the phenoxide or does it mean more than one heteroatom substituted phenoxide taken as a whole as a ligand on the metal? Part a) of claim 1 suggests the latter, taking "more than one heteroatom substituted phenoxide" on the whole as a ligand. Part e) suggests the former, where the more than one heteroatom substituted phenoxide is described as an oxygen atom and the other heteroatom excludes oxygen. Clarification is required. Additionally, line 9 of claim 1 states "if the metal is a Group metal" but does not state a Group number. Appropriate correction is required.

4. Claim 15 is objected to because of the following informalities: part e) of claim 15 is confusing because it does not specify if R^1-R^5 means on the same phenoxide ring or if it applies over the two rings of the second formula. Appropriate correction is required. Judging by the applicants' remarks in Paper No. 8, the reason for the amendment to claims 1 and 15 was to exclude hydroquinones as ligands in catalytic systems. The examiner feels this was not accomplished by the amendment as written, but for the sake of expediency will withdraw the

arguments based on Kelsey (U.S. Patent No. 5,278,305). The examiner maintains the option of reapplying these arguments if suitable clarification is not provided.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

6. Claims 1-39 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Claims 1 and 15 upon which the remaining claims are dependent upon include the new matter limitation that the heteroatom group on the "more than one heteroatom substituted phenoxide" not be oxygen. This is considered to be a narrowing limitation without support in the specification.

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

8. Claims 1, 2, 13, 15-19, 22, 27, 28, 34, 35, 37, 38, and 50 remain rejected under 35 U.S.C. 102(b) as being anticipated by Milani *et al.* (Inorganica Chimica Acta, *103*, **1985**, 15-18) for the same reasons put forth in the previous Office Action.

9. Claims 1-6, 8, 9, 13, 15, 18-22, 26, 27, 29, 31-34, 38, and 39 are rejected under 35 U.S.C. 102(a) as being clearly anticipated by Fujita *et al.* (EP 0 874 005 A1).

Fujita *et al.* disclose bis(salicylimino)$ZrCl_2$ compounds where the two salicylimino ligands are not bound to each other and have a t-butyl alkyl group in the 1 position of the phenyl ring. The bis(salicylimino)$ZrCl_2$ compounds are used with either a trialkyl aluminum or methylalumoxane activator for the polymerization of ethylene. The ratio of activator to transition metal is 500. This is within the range of claim 34. See page 83 for a description of the bis(salicylimino)$ZrCl_2$ compound designated as B-1, and Table 1 on page 141, entries 7-14 for polymerization conditions and results. Fujita *et al.* also disclose bis(salicylimino)$TiCl_2$ complexes with an organoaluminum activator supported on a silica support. See pages 150-151, Examples 163, 164, and 165.

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103© and potential 35 U.S.C. 102(f) or (g) prior art under 35 U.S.C. 103(a).

11. Claims 1-6, 8, 9, 15, 16-27, 29-32, 38, 39, and 42-48 remain rejected under 35 U.S.C. 103(a) as being unpatentable over Bansleben *et al.* WO 98/42664) for the same reasons put forth in the previous Office Action.

12. Claims 33 and 49 remain rejected under 35 U.S.C. 103(a) as being unpatentable over Bansleben *et al.* in view of Tachikawa *et al.* (U.S. Patent No. 4,686,199), Lee *et al.* (U.S. Patent No. 4,405,495), and Chamla *et al.* (EP 0 453 088) for the same reasons as put forth in the previous Office Action.

13. Claims 1, 2, 15-17, 22, 29, 30, 34, 35, 37, 38, and 50 remain rejected under 35 U.S.C. 103(a) as being unpatentable over Klabunde (U.S. Patent No. 5,030,606) for the same reasons put forth in the previous Office Action.

14. Claims 1 and 2 remain rejected under 35 U.S.C. 103(a) as being unpatentable over Johnson *et al.* (U.S. Patent No. 5,714,556) for the same reasons put forth in the previous Office Action.

15. Claims 1-3, 9, and 10 remain rejected under 35 U.S.C. 103(a) as being unpatentable over Zum Mallen (U.S. Patent No. 5,962,361) for the same reasons put forth in the previous Office Action.

16. Claims 7, 11, 12, 14, 23-25, 28, 30, 35-37, and 40-49 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fujita *et al.* (EP 0 874 005 A1).

Fujita *et al.* teach bis and mono-salicylimino complexes of group 4 metals to be used with trialkyl aluminum compounds, alkylalumoxanes, and/or borane activators where when there is more than one salicylimino ligands the ligands are not connected. See pages 11-13 for a full description of compound I, and pages 54-59 for a full description of the activators and page 62, lines 29-34 for the ratio ranges of activator to transition metal. These ranges overlap the claim 35 and 36 ranges. Overlapping ranges have been held to establish *prima facie* obviousness. MPEP 2144.05. Fujita *et al.* also teach a carrier which can be silica which is partially dehydrated before use for the transition metal complex and activator. See page 59, lines 27-58, and continued onto page 60, lines 1-40. The compounds of Fujita *et al.* can be used

in combination with each other or with other transition metal compounds such as mono or bis cyclopentadienyl complexes. See page 50, lines 48-50, and page 52, lines 25-54. Fujita *et al.* fail to disclose an example of the catalytic system claimed in claims 7, 14, 23-25, 28, 30, 35-37, and 40-49. It would have been obvious to one ordinarily skilled in the art of transition metal catalysts to prepare such a catalytic system. The motivation would have been that such a catalytic system is fairly taught by Fujita *et al.*

Response to Arguments

17. Applicant's arguments filed December 22, 2000, have been fully considered but they are not persuasive. Applicants' argue against the 102(b) rejection over Milani *et al.* because Milani *et al.* use either n-butyl perchlorocrotonate or ethyl trichloroacetate together with diethylaluminum chloride, and the activators of the instant claims do not include either n-butyl perchlorocrotonate or ethyl trichloroacetate. This is not found persuasive because the instant claims use the open language of the phrase "a catalyst system comprising" which allows additional materials such as either n-butyl perchlorocrotonate or ethyl trichloroacetate to be present as long as the limitations of the claims are met. The remaining arguments all address the 103(a) rejections over the various references listed above under ***Claim Rejections - 35 USC 103***, and center around the same point. The applicants argue that if a reference does not disclose an example of the claimed catalyst system how can it fairly teach it? This is not found persuasive because the full disclosure of a reference including especially the specification is available as

prior art. If a reference included an example in its Example section, for instance, then a 102 type rejection would be in order. If instead the reference teaches the catalytic system by describing the same catalysts, activators, and relative amounts, then the reference is said to fairly teach the invention and a 103 obvious type rejection is in order. The passages with respect to columns and lines presented in the 103(a) rejections of the previous Office Action are considered to fairly teach the applicants' invention.

It should be noted that the allowance of claims 40 and 41 and the objection to claims 7, 11, 12, and 14, as being dependent upon a rejected base claim but would be allowable if rewritten in independent form, have been withdrawn in view of the Fujita *et al.* (EP 0 874 005 A1) reference.

18. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael J. DiVerdi whose telephone number is (703) 305-0213. The examiner can normally be reached on Monday-Thursday from 6:30 AM to 4:00 PM. The examiner can also be reached on alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Bell, can be reached on (703) 308-3823. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications.

Any inquiry of general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

Mark L. Bell
Supervisory Patent Examiner
Technology Center 1700

Michael J. DiVerdi

March 1, 2001